DOCUMENT RESUME

ED 090 263 64 IR 000 574

AUTHOR	Wood, Penelope
TITLE	Review of CBP Interview Procedure and Data. Investigative Report No. 7321.
INSTITUTION	Syracuse City School District, N.Y.
SPONS AGENCY	Bureau of Education for the Handicapped (DHEW/OE), Washington, D.C. Media Services and Captioned Films Branch.
PUB DATE	Jun 73
CONTRACT	OEC-9-423617-4357(616)
NOTE	12p.; Supporting document for the Computer-Based Project for the Evaluation of Media for the Handicapped; For related documents see IR 000 572, 573, and 575
EDRS PRICE	MF-$0.75 HC-$1.50 PLUS POSTAGE
DESCRIPTORS	Ability Identification; *Educable Mentally Handicapped; *Evaluation Criteria; Evaluation Methods; *Evaluation Techniques; *Interviews; Media Research; Mentally Handicapped; Reliability; Research Problems; Retarded Children; Validity; Verbal Ability; Verbal Tests; Visual Learning
IDENTIFIERS	BEH; Bureau of Education for the Handicapped; Computer Based Project Evaluation Media Handicapp; Learner Based Evaluation Systems

ABSTRACT

After an interview procedure used with educable mentally retarded children is described, the findings of an examination of some collected interview data are reported in this study of the Computer Based Project for the Evaluation of Media for the Handicapped. An ex post facto analysis revealed a moderately high correlation between interviewer ratings of the child's verbal capabilities and sum word-counts to questions designed to indicate whether the child had visual and auditory experiences while exposed to a film. The implications for learner-based evaluation systems are discussed. (WDR)

ED 090963

INVESTIGATIVE REPORT #7321
Penelope Wood
June 1973

REVIEW OF CBP INTERVIEW PROCEDURE AND DATA

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ABSTRACT

The interview procedure used with educable mentally retarded children (EMR) in the evaluation of media at the Computer Based Project is described, and the findings of an examination of the interview data collected are reported. The interview procedure utilizes questions designed to indicate whether the child had visual and auditory experiences while exposed to a film, and the relative strength of these experiences. The interviewer also makes a quantitative assessment of the child's verbal capabilities. An ex post facto analysis of the data for three films revealed a moderately high correlation between verbalization ratings and sum word-counts for the interview questions. Overall, the data supported findings which indicate that the verbal performance of EMR children is limited. The implications for learner-based evaluation systems are discussed.

IR 000 574

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SPECIAL REPORT No. 7321
COMPUTER-BASED PROJECT for the EVALUATION of MEDIA for the HANDICAPPED

Title: REVIEW OF CBP INTERVIEW PROCEDURE AND DATA

BY: Penelope Wood

BACKGROUND

The Computer Based Project for the Evaluation of Media for the Handicapped, based on contract #OEC-9-423617-4357 (616) between the Syracuse (N.Y.) City School District and the Media Services and Captioned Films Branch, Bureau of Education for the Handicapped (United States Office of Education) for the five year period July 1, 1969 through June 30, 1974. The major goal is to improve the instruction of handicapped children through the development and use of an evaluation system to measure the instructional effectiveness of films and other materials with educable mentally handicapped (EMH) children, in-service training and media support for special teachers, and studies related to the evaluation process and the populations used.

The Project has concentrated on the 600 films and 200 filmstrips from the Media Services and Captioned Films (BEH - USOE) depository; however, specific packages from Project LIFE, various elementary math curricula, and selected programs from Children's TV Workshop have also been evaluated. The evaluation model used requires that: 1) objectives of materials be specified and written; 2) instruments be constructed to test and measure effectiveness; and, 3) children be the major sources of evaluation information. A number of instruments and methodologies are employed in the gathering of cognitive and affective data from 900 EMH children and 80 special teachers to make the effectiveness decisions. Over half of the EMH population can neither read or write; therefore, a unique Student Response System (SRS) is employed, consisting of a twenty station G.E.-1000 SRS which can be operated in a group or individual recording mode and is connected to a remote computer system. The computer capabilities consist of remote telephone connections to the Rome (N.Y.) Air Development Command, the Honeywell time-shared network, and the Schenectady (N.Y.) G E Research and Development Center; and batch mode capabilities of the Syracuse City Schools, Syracuse University, and various commercial sources.

In-service and media support activities provide on-the-job training for teachers, teacher aides, equipment, and materials to the special teachers in the city schools. The research activities have centered around investigations and special problems related to the development of the evaluation model. The four major areas considered are: 1) testing effects, 2) captioning effects, 3) special student characteristics; and, 4) evaluation procedures validation.

Documentation of the major activities appear in the five annual reports and the 600 evaluations prepared on materials used. Staff members were encouraged to prepare special reports and the attached paper is one of these. The opinions expressed in this publication do not necessarily reflect the position or policy of the Computer Based Project, the United States Office of Education, or the Syracuse City School District, and no official endorsement by any of the agencies should be inferred.

Investigative Report 7321
Penelope Wood
June 1973

Review of CBP Interview Procedure and Data

The Computer Based Projectfor the Evaluation of Media for the Handicapped, funded by the United States Office of Education, Bureau of Education for the Handicapped, and under contract with the Syracuse City School District, Department of Special Education, has developed a learner-based model for the evaluation of media. The model is a multi-step process involving: (1) ascertainment and assignment of instructional objectives for a given material; (2) establishment of levels of performance for various student populations and data collection,using student populations, on cognitive, attentional, and attitudinal responses resulting from media exposure; (3) field trial of the material by a classroom teacher in a classroom setting. Much activity of the Project is concerned with use of this model to evaluate the instructional effectiveness of materials produced for deaf children, especially captioned films, with educable mentally retarded (EMR) and emotionally disturbed (SSR) children.

The Project is now completing its fourth year of operation. In accordance with contract obligations, there has been continuous data collection and assessment of media botn prior to - and simultaneously with - continuing development, evaluation, and refinement of model procedures. In theory, a learner-based model for evaluation of instructional materials may draw considerable merit from the assumptions of learner-centered education. In practice, the collection and analyzing of learner-response data may be

fraught with questions of validity and reliability, and these must be continually examined. The model comprises several subsystems for data collection; it is the student interview procedure and data which are the concerns of this report.

Interview Procedure

The interview procedure was designed "to accommodate both the desire to give the child an opportunity to give a free response and the need to standardize the items for analysis purposes" (Bond, p.81). Immediately following a film presentation, a student is selected from the group by seat number and taken by the interviewer to a quiet place. The items of the interview are then asked by a staff member and answers recorded verbatim onto the interview form. Interviewers are instructed "to create an open dialogue with the child and not to pressure a response" (Bond, p.84). Specific questions are asked in attempt to guide the child in telling the interviewer what he experienced during the viewing. Items are designed to indicate whether the child had visual and auditory experiences while exposed to the film and the relative strength of these experiences. Following the interview the interviewer makes a quantitative assessment of the child's verbal capabilities on a graphic scale of 1 to 6. The graphic rating scales give an interpretative ratio of three performance characteristics of the child: verbalization, verbalization of visual experiences; and verbalization of auditory experiences. Such assessments are made in attempt to obtain a measure for comparing a child's response against his capability for making a response. Subsequently, interview reponses are encoded quantitatively for computer processing. Answers

to open-ended questions are recorded as the number of words in the response, coded 1 through 9 with a, an, and the omitted: a child's response , "making doughnuts," to the question, "What do you think the film was about?" is encoded as 2. The several closed questions calling for yes or no answers are encoded as 1 and 2, respectively.

The interview procedure as used by Computer Based Project has yet to be validated and assessed for reliability. Given the communicative problems of mentally retarded and emotionally disturbed children, there is some question as to whether or not a verbal interview measures effectively and consistently the perceptual-cognitive responses of a child to a film. Schlanger (1953), measuring verbal productions of primary EMR children, reported evidence attesting their being verbally handicapped. Such children demonstrated a shorter mean length of sentence than normal children, twenty-one percent of the sentences one word in length. These sentences generally involved the naming of objects and people, and Schlanger has cited the use of such concrete-noun sentences as further evidence of linguistic immaturity. Wood (1960) has described communication problems of EMR children in her studies of learning potential. Evans (1965) reported erratic verbal behavior among mentally retarded children who, given an opportunity to communicate with the investigator, demonstrated low to midling probability of cooperation. Anastasio (1972), working with the Computer Based Project, observed the lack of verbal expression in EMR and SSR children. He noted discrepancy between the observed behavioral responses of children while watching a film and their interview-reported responses.

In addition to the basic question of whether or not a verbal procedure can be judged valid and reliable to measure a verbally handicapped child's response to media, there are questions of validity to be examined in the encoding of student responses for data analysis. Assuming the open-ended questions are asked for the purpose of eliciting content from a student, there is considerable debate as to whether a quantitative measure of the verbal response has any validity as a measure of content; whether the number of words used to answer a question has any significance for what has been said in an interview. Little research was found dealing with the quantitative encoding of verbal responses as used by the Computer Based Project. Schlanger (1953) measured length of verbal productions of mentally retarded children and considered such measures useful as a test of language development, but made no attempt to equate sentence-length with content. Jordan, reviewing the literature of language and mental retardation, found word-count a "relatively unused measure whose correlates do not seem to have been fully explored" (1967). Sause and Crowley (1970) describe a computer technique for analyzing interviews with children; however, their approach involves a content analysis through identification of key words and is not a word-count.

Data Examination

To begin analysis of validity and reliability questions, the investigator examined the interview data held by the Project. Two hypotheses were formulated, comparing verbal performance against estimated verbal capability:

(1) An EMR child's verbal behavior within the CBP interview situation, as measured by the verbalization score assigned by the interviewer, remains relatively constant from one film/interview to another.

(2) An EMR child's verbal behavior within the CBP interview situation, as measured by the sum word-count of questions 1,3,5,7,8,14, varies from one film/interview to another.

The investigator reasoned that if the verbalization score assigned by the interviewer is a valid and reliable measure of a child's capability for making verbal responses, that score should remain relatively constant. If on the other hand, quantititive measures of responses to open-ended questions have any relationship to a child's experience with one film differs from his experience with another, then the sum word-count willshow variance from one film interview to another.

To test the above hypotheses, an ex post facto investigation of data was planned using three different films as the independent variable and analyzing variance in verbalization scores and word-counts. Interview data for spring 1972 were pulled from the data banks. Several different interview forms had been used; Form 8, the latest adopted and most standardized, was selected for analysis, and 454 cases were found listed. At this point, however, the planned investigation appeared questionable, since interviewers who had collected the data were not listed in the data. Considering interviewer a critical variable for both the stated hypotheses, the investigator returned to the media files, drew names of interviewers from all available original interview forms, and coded these into the data. Cases were then reviewed. To test hypotheses (1) and (2), cases in which one child was interviewed successively by the same interviewer for different films were sought, but of the total, only 4 such cases were found. Cases in which randomly selected students of one level were interviewed by one or two interviewers for successive films were too few for meaningful analysis. Hypotheses (1) and

(2) could not be tested with the available data.

Data was then examined for any possible usefulness. A third hypothesis having some bearing on questions of validity and reliability was formulated:

> The sum word-count from questions 1,3,5,7,9,14 of the CBP interview form, as completed by EMR students, correlates positively with the verbalization score assigned by the interviewer.

The investigator reasoned that there would be a high positive correlation between verbalization scores and sum word-counts. An extremely high correlation, however, would suggest too high agreement in scores which purportedly measure different things: general capability for verbal expression and verbal performance in a specific situation. Of nine interviewers three had conducted roughly half of the interviews, and these were selected for analysis. Data were transferred to format suitable for SPSS processing and programs run for correlation and cross-tabluation.

As predicted, a high correlation was found between the verbalization rated assigned by the interviewer and the sum word-count for open-ended questions of the interview. The Pearson coefficient for the two variables on 181 interview cases conducted by interviewers 3,5,and 7 is +.65.

Cross-tabulations were run as follows: interviewer by sum word-count, student level (primary, intermediate, secondary) by sum word-count, film by sum word-count, verbalization rating by sum word-count; film by sum word-count controlling for level, film by sum word-count controlling for interviewer, and student level by sum word-count controlling for interviewer. Sum word-counts were grouped 0 to 5, 6 to 10....21 to 30 and recoded. Since 27 films and 116 different students were involved, however, the data have little value for suggesting either differences among interviewers or differing effects of film as measured by interview. In the majority

of cases, sum word-counts of interviews ranged from 6 to 15 words: for interviewer 3, 72%; interviewer 5, 56%; interviewer 7, 55%. Differences in cross-tabulation of sum word-count by film, controlling for student level, are too scattered to be meaningful, even assuming interviewer reliability.

Conclusions

The moderately high positive correlation found between verbalization rating and sum word-count suggests some implications concerning the procedure. Verbalization scores are assigned by the interviewer following the interview and are intended to represent a student's capability for verbal response as opposed to actual performance. There is danger in such a procedure that the estimated capability be simply a reflection of a specific performance; that the verbalization score assigned by simply a scalar measure of how many words a student has spoken in a given interview. An extremely high correlation between the verbalization rating and the sum word-count would suggest little difference between the two scores and the verbalization capability rating meaningless. The moderately high correlation is a predictable estimate for scores which are related but (by stated assumption) not equivalent. Cross-tabulation data show low verbalization scores of 2 and 3 assigned to interviewees performing with sum word-counts which vary from lowest (0 to 5 words) to highest (21 to 30) range. Thus it may be stated that the two scores are not redundant. Whether the variance between verbal capability and performance is related to film, however, cannot be determined from the data.

One conclusion drawn from the data may be significant for the work of the Project: for interviews analyzed representing all three student levels,

the sum word-count for 6 open-ended questions totals 10 words or less in 44% of the cases, 15 words or less in 73% of the cases. The limited verbal performance is in keeping with the findings of Schlanger, Evans, and Anastasio, attesting the verbal limitations of EMR children. When the response-mode itself is so limited, it is questionable whether that mode can be used effectively to register differing experiences with film; and the questions raised make all the more critical the need to validate the procedure.

The stated purpose of the interview procedure is important for a learner-based evaluation system and combines two critical elements: the opportunity for the child to give a free response about his experience with film or other instructional material; and the standardization of items for analysis purposes. It is possible that the procedure could be refined and that a word-count measure to open-ended questions could be found to have some relationship to a child's differing experiences with one film or another. Furthermore, such a finding would have value for learner-based evaluation models beyond the work of Computer Based Project. However, the data examined have little value for determining a given student's response to film, the film's effectiveness with a group of students, or even the validity of the procedure. It is suggested that the Project either suspend interview data collection or revise the procedures, controlling for interviewer. If the interview procedure is continued, it is suggested that a research study comparing student responses in varying question modes - open-ended questions, closed questions, pictorially presented questions - be conducted to assess the relationship of word-count during an interview with information about a child's interaction with film obtained through more concrete procedures.

FILE NONAME (CREATION DATE = 07/31/73)

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